

Site: Shiloh Church Road Site

Task: Mound 3 Excavation

Date: 10/1/19

Predicted Predominant Wind Direction: SW

Predicted Maximum Wind Speed: 4 mph



Ludlum 3030 Serial Number:	187982	Cal Due Date:	2/19/2020
Th-230 4π efficiency:	0.3244	Tc-99 4π efficiency:	0.3155
Pu-239 4π efficiency:	0.3996	C-14 4π efficiency:	0.0679
Am-241 4π efficiency:	0.3452	Sr-90 4π efficiency:	0.4264

Notes:

Radionuclide Air Sampling
Daily Summary
Shiloh Church Road Site
Halifax County, Virginia

Date: 10/1/19

Predicted Predominant Wind Direction: SW

Public Results

Effluent Limits	Alpha (Ra-226)	9.00E-13	Beta (Pb-210)	6.00E-13
Air Sampler Location	% Of Effluent Concentration Limit	Alpha Result ($\mu\text{Ci/mL}$)	% Of Effluent Concentration Limit	Beta Result ($\mu\text{Ci/mL}$)
Northeast Perimeter	<2.33%	-1.21E-14	<97.72%	-8.53E-14

Worker Results

Derived Air Concentrations	Alpha (Ra-226)	3.00E-10	Beta (Pb-210)	1.00E-10
Tasks Monitored	% Of Derived Air Concentration	Alpha Result ($\mu\text{Ci/mL}$)	% Of Derived Air Concentration	Beta Result ($\mu\text{Ci/mL}$)
AC-5 - Excavation Team	<0.09%	1.26E-13	<8.81%	-3.91E-12

Comments:

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Air Sampling Unit: F&J LV-1

Calibrator Serial: 3067

Cal Due Date: 1/21/20

Calibrator Serial: 3067				Cal Due Date: 1/21/20				α isotope of concern			Ra-226		β isotope of concern			Pb-210	
Pre Flow Rate (LPM)		80.0						Post Flow Rate (LPM)				77.6					
Start Date/Time		10/1/19 8:25						Stop Date/Time				10/1/19 17:45					
						Total Liters						41685.2					
Analysis Date/Time		Hours After Collection	Bkg count time (min)	Sample count time (min)	α bkg (counts)	gross α (counts)	net α (cpm)	α MDA (μCi/mL)	α (μCi/mL)	β bkg (counts)	gross β (counts)	net β (cpm)	β MDA (μCi/mL)	β (μCi/mL)			
10/7/19 10:30		136.7	60	70	62	47	-0.36	2.10E-14	-1.21E-14	2385	2745	-0.54	5.86E-13	-8.53E-14			
Final Result		Hours After Collection	Bkg count time (min)	Sample count time (min)	α bkg (counts)	gross α (counts)	net α (cpm)	α MDA (μCi/mL)	α (μCi/mL)	β bkg (counts)	gross β (counts)	net β (cpm)	β MDA (μCi/mL)	β (μCi/mL)			
10/7/19 10:30		136.7	60	70	62	47	-0.36	2.10E-14	-1.21E-14	2385	2745	-0.54	5.86E-13	-8.53E-14			
								% Eff Criteria:	<2.33%					% Eff Criteria:	<97.72%		

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Air Sampling Unit: AirCheck XR5000 AC-5

Dry Cal Serial: 132112

Cal Due Date: 7/11/20

Dry Cal Serial: 132112					Cal Due Date: 7/11/20					α isotope of concern				Ra-226		β isotope of concern				Pb-210	
Pre Flow Rate (LPM)		4.632					Post Flow Rate (LPM)					4.910									
Start Date/Time		10/1/19 9:08					Stop Date/Time					10/1/19 17:25									
							Total Liters					2247.3									
Analysis Date/Time		Hours After Collection	Bkg count time (min)	Sample count time (min)	α bkg (counts)	gross α (counts)	net α (cpm)	α MDA (μCi/mL)	α (μCi/mL)	β bkg (counts)	gross β (counts)	net β (cpm)	β MDA (μCi/mL)	β (μCi/mL)							
10/2/19 14:50		21.4	120	80	88	75	0.2	2.74E-13	1.26E-13	4641	2988	-1.33	8.81E-12	-3.91E-12							
Final Result		Hours After Collection	Bkg count time (min)	Sample count time (min)	α bkg (counts)	gross α (counts)	net α (cpm)	α MDA (μCi/mL)	α (μCi/mL)	β bkg (counts)	gross β (counts)	net β (cpm)	β MDA (μCi/mL)	β (μCi/mL)							
10/2/19 14:50		21.4	120	80	88	75	0.2	2.74E-13	1.26E-13	4641	2988	-1.33	8.81E-12	-3.91E-12							
								% DAC:	<0.09%						% DAC:	<8.81%					

Notes: Assigned to Excavation Team.